

## Abstract

Last decade has seen the discovery of many exotic charmonium-like states.  $X(3872)$  is the poster boy of such exotic states. The nature of  $X(3872)$  is still unknown. Precise measurement of  $R_{3\pi/2\pi} = B(X(3872) \rightarrow J/\psi \pi^+\pi^-\pi^0) / B(X(3872) \rightarrow J/\psi \pi^+\pi^-)$  is crucial to understand the nature of  $X(3872)$  state. We performed Monte Carlo study for  $B^{+-} \rightarrow (J/\psi)K$  decay at Belle detector. We estimated the reconstruction efficiency for  $B \rightarrow X(3872)K$  and  $B \rightarrow X(3915)K$  decay modes. Based on that we expect 35 (170) signal events for  $X(3872) \rightarrow J/\psi$  ( $X(3915) \rightarrow J/\psi$ ) from the (4S) data collected by Belle detector at KEKB asymmetric electron-positron collider.